

**IN THE CLAIMS:**

Please **AMEND** claims 1, 5, 16 and 17, and **CANCEL** claims 2, 7, 18, and 19 without prejudice or disclaimer in accordance with the following:

1. **(CURRENTLY AMENDED)** An apparatus for forming a recording pattern and an erase pattern alternatively and sequentially on an optical recording medium in response to input data having a first level and a second level, respectively, in an optical recording apparatus, comprising:

a recording waveform generating unit generating a recording waveform which includes first pulses to form the recording pattern in response to the first level of the input data and second pulses including a leading pulse and a multi-pulse having corresponding high and low power levels to form the erase pattern in response to the second level of the input data, and further generates a cooling pulse as a portion of the first pulses forming another recording pattern preceding the erase pattern and another portion of the erase pattern before the leading pulse,

wherein a power level of the leading pulse of the second pulses is the low power level of the multi-pulse, and a power level of a period between an end point of the second pulses and a start point of the first pulses is the high power level of the multi-pulse, and a power level of the cooling pulse is below the low power level of the multi-pulse.

2. **(CANCELLED)**

3. **(PREVIOUSLY PRESENTED)** The apparatus of claim 1, wherein the first pulses each have a first duty cycle and a first amplitude, and the second pulses each have a second duty cycle different from the first duty cycle and a second amplitude different from the first amplitude.

4. **(PREVIOUSLY PRESENTED)** The apparatus of claim 1, further comprising:

a pickup unit forming a mark corresponding to the recording pattern on the optical disc in response to the first pulses and erasing another mark to form a space corresponding to the erase pattern on the optical disc in response to the second pulses.

5. **(CURRENTLY AMENDED)** An apparatus for forming a recording pattern and an erase pattern alternatively and sequentially on an information storage medium in response to input

data having a first level and a second level, respectively, in a recording apparatus, comprising:

a recording waveform generating unit generating a recording waveform which comprises the recording pattern corresponding to the first level of the input data and having first pulses, the erase pattern corresponding to the second level of the input data and having a leading pulse and a multi-pulse having corresponding high and low power levels, and a cooling pulse concatenating the recording and erase patterns,

wherein a power level of the leading pulse is the low power level of the multi-pulse, and a power level of a period between an end point of the multi-pulse and a start point of the first pulses is the high power level of the multi-pulse, and the cooling pulse has a cooling power level less than a recording power level of the recording pattern and the power level of the leading pulse.

6. (CANCELLED)

7. (CANCELLED)

8. (PREVIOUSLY PRESENTED) The apparatus of claim 1, wherein the recording waveform generating unit generates the recording waveform using the input data modulated according to a Run Length Limited (RLL)(1, 7) method.

9. (CANCELLED)

10. (PREVIOUSLY PRESENTED) An apparatus for forming a recording pattern and an erase pattern alternatively and sequentially on an optical recording medium in response to input data having a first level and a second level, respectively, in an optical recording apparatus, comprising:

a recording waveform generating unit generating a recording waveform which includes first pulses to form the recording pattern in response to the first level of the input data and second pulses including a leading pulse and a multi-pulse having corresponding high and low power levels to form the erase pattern in response to the second level of the input data,

wherein:

a power of the leading pulse of the second pulses is equal to a power of a period between an end point of the second pulses and a start point of the first pulses, and

the recording waveform further comprises a cooling pulse concatenating and

included in the recording and erase patterns and having a cooling power level less than the power level of the leading pulse of the second pulses.

11. **(PREVIOUSLY PRESENTED)** The apparatus of claim 10, wherein the power of the leading pulse is the low power level of the multi-pulse.

12. **(PREVIOUSLY PRESENTED)** The apparatus of claim 10, wherein the power of the leading pulse is the high power level of the multi-pulse.

13. **(PREVIOUSLY PRESENTED)** The apparatus of claim 10, wherein the multi-pulse of the erase pattern has a first pulse power and a second pulse power greater than the first pulse power, and the power of the leading pulse is equal to the first pulse power.

14. **(PREVIOUSLY PRESENTED)** The apparatus of claim 11, wherein the multi-pulse of the erase pattern has a first pulse power and a second pulse power greater than the first pulse power, and the power of the period before a first one of the first pulses of the recording pattern is equal to the first pulse power.

15. **(CANCELLED)**

16. **(CURRENTLY AMENDED)** ~~The apparatus of claim 1~~An apparatus for forming a recording pattern and an erase pattern alternatively and sequentially on an optical recording medium in response to input data having a first level and a second level, respectively, in an optical recording apparatus, comprising:

a recording waveform generating unit generating a recording waveform which includes first pulses to form the recording pattern in response to the first level of the input data and second pulses including a leading pulse and a multi-pulse having corresponding high and low power levels to form the erase pattern in response to the second level of the input data,

wherein:

a power level of the leading pulse of the second pulses is the low power level of the multi-pulse, and a power level of a period between an end point of the second pulses and a start point of the first pulses is the high power level of the multi-pulse, and

the recording waveform further comprises a cooling pulse concatenating and included in the recording and erase patterns and having a cooling power level less than the

power level of a last one of the first pulses and the leading pulse of the second pulses.

17. **(CURRENTLY AMENDED)** The apparatus of ~~claim 2~~claim 1, wherein the cooling pulse has a cooling power level less than the power of a last one of the first pulses and the power level of the leading pulse of the second pulses.

18. **(CANCELLED)**

19. **(CANCELLED)**

20. **(PREVIOUSLY PRESENTED)** An apparatus for forming a recording pattern and an erase pattern alternatively and sequentially on an optical recording medium in response to input data having a first level and a second level, respectively, in an optical recording apparatus, comprising:

a recording waveform generating unit generating a recording waveform which includes first pulses to form the recording pattern in response to the first level of the input data, and second pulses including a leading pulse and a multi-pulse having corresponding high and low power levels to form the erase pattern in response to the second level of the input data,

wherein:

a power level of the leading pulse is at the low power level of the multi-pulse and a power level of a period between an end point of the second pulses and a start point of the first pulses is at the low power level of the multi-pulse, and

the recording waveform further comprises a cooling pulse concatenating and included in the recording and erase patterns and having a cooling power level less than the low power level of the leading pulse.